BEFORE THE
FEDERAL COMMUNICATIONS DIVISION
WASHINGTON, D.C. 20554

In the Matter of:	)	
Unlicensed Operation in the TV Broadcast Bands	)	ET Docket No. 04-186

SUMMARY REPORT OF THE 45-DAY PUBLIC TRIAL OF THE KEY BRIDGE GLOBAL LLC TV BAND DATABASE SYSTEM

Key Bridge Global LLC
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McLean, VA 22102

May 1, 2013

Introduction

Key Bridge Global LLC (Key Bridge) respectfully submits herein this Summary Report of the 45-Day public trial of the Key Bridge TV Bands Database System; also referred to as the Key Bridge White Space Portal or Portal.

As announced by the FCC's Office of Engineering and Technology in a Public Notice released on Monday, March 04, 2013 (DA 13-328) Key Bridge conducted a 45-day public trial of our White Space database system from Monday, March 11, 2013 to Wednesday, April 24, 2013. The trial was intended to allow the public to access and test the Key Bridge White Space System to ensure that it 1) correctly identifies channels that are available for unlicensed radio transmitting devices that operate in the TV band (unlicensed TV band devices), 2) properly registers those facilities entitled to protection, and 3) provides protection to authorized services and registered facilities as specified in the Rules.

During the course of the trial Key Bridge actively encouraged and sought out interested parties to test our White Space System and to provide us with their feedback. A dedicated Support facility was created and incorporated into the Portal to make the process of submitting feedback as easy as possible.

Additionally, to further simplify user testing and evaluation of our System, its operational capabilities and its features, we developed and incorporated three feature-rich applications into the Portal. These are:

- Spectrum Explorer
- Database Browser
- Channel Calculator

The Key Bridge Spectrum Explorer is a rich Internet application that enables simple search and geographic visualization of white space channel availability and protected entity contours. Users may identify and inspect the details of white space spectrum availability at any valid location within the United States and territories.

The Key Bridge Data Browser is rich Internet application useful for browsing, searching and reviewing database records. This application provides a streamlined user interface for viewing database record details of user-submitted registration records and FCC-originated protected entity information.

The Key Bridge Channel Calculator enables users to view White Space channel availability at a desired location for all possible query configurations in summary, tabular form. This rich Internet application provides a comprehensive picture of unlicensed spectrum availability and may be helpful for network planning or channel selection analysis.

Each of these applications was made publicly available by a link from the Portal main page.

Summary of Trial Results

The Key Bridge System trial was conducted from Monday, March 11, 2013 to Wednesday, April 24, 2013. During this period (approximately):

- The Portal was visited 1,185 times by 604 unique users.
- Of those 600 users, 58 registered an account on the system and extensively exercised the system registration work flows.
- 114 call signs were enabled.
- 55 Wireless Service records were created, the vast majority of them being licensed wireless microphone registrations.

Portal visitors tended to fall into two categories, which we arbitrarily named “casual” and “returning”. “Casual” visitors tended to review the site and its contents, exercised the applications, but did not register an account or visit any Portal sections requiring sign-in. “Returning” visitors are those that created an account and returned to use various aspects of the Portal, again and again.

We find it noteworthy that after six weeks of availability the “Returning” users outnumber “Casual” users and use the portal an average of 10 minutes per visit. This indicates a high degree of user engagement and is reflected in the thoughtful and detailed feedback we received from many users.

Analytic reports of user traffic may be viewed in Appendix 1.

System Performance and Availability

The Key Bridge System is comprised of three major components: Application, Computer and Network.

During the trial period the Key Bridge Application was deployed on a typical computer and network configuration scaled to support a moderate number of users. The computer and network performance matched expected levels and its availability was 100% during the trial period.

During the trial period Key Bridge instituted a weekly software build/deploy cycle where enhancements and bug-fixes could be incorporated into the application and loaded onto the computer on a weekly basis; or daily if a major issue was discovered.

Excepting for scheduled maintenance the System (application, computer plus network) was fully availability throughout the trial period. Cumulative maintenance down-time during the Trial was less than one hour.

User Feedback and Comments

User comments and feedback is tracked using a Key Bridge ticketing system, where each user comment is assigned a unique ticket.

During the trial 43 comments were submitted into the Key Bridge ticketing system: 11 were entered by Key Bridge to track QA or system administration issues and 32 tickets were submitted by external users.

User tickets submitted early in the trial generally covered Rule-related inquiries and Portal usability questions or suggestions. Later tickets were typically more specific and concerned results for a particular scenario or detailed recommendations for feature fixes or enhancement.

All user-submitted tickets have been carefully considered and where appropriate (and possible) a complete response was provided to the user via email.

The White Space System was incrementally updated during the course of the trial to incorporate many user-suggested enhancements and features. Some of these enhancements did not match user expectations or themselves introduced a new bug into the System, which occasioned one or more new tickets.

Some tickets were also duplicative of others, related, or simply extended or revised a previously submitted comment. These tickets categories have been marked as 'duplicate'. Duplicate comments are grouped and shown with their related master ticket in the attached report.

A detailed summary report of user-generated tickets and their resolution is provided in Appendix 2.

Changes Made During the Trial

The following changes were made during the course of the Trial.

- Improve AJAX user feedback indicators in the LPAUX and MVPD registration form when calculating available channels or candidate primary stations, respectively
- Incorporate Key Bridge AutoLocate 'Find-Me' feature into applications and registration forms to simplify user identification of their present geographic coordinates
- Eliminate sign-in requirement when enabling unlicensed White Space Devices
- Reduce Spectrum Explorer browser resource consumption. This corrected reduced performance on low-powered user devices
- Various user-interface fixes and enhancements
- Various system configuration fixes and adjustments

Each ticket resolution was communicated to the reporting user whenever possible. Some tickets were submitted anonymously and therefore no response could be made. Users were provided a complete ticket resolution report via email and encouraged to contact Key Bridge if they had additional questions or the applied resolution was not to their satisfaction.

Conclusion

Key Bridge respectfully submits that the trial was a success. The trial did allow the public to extensively test and exercise the Key Bridge White Space System and to ensure that it:

1) correctly identifies channels that are available for unlicensed radio transmitting devices that operate in the TV band (unlicensed TV band devices),
2) properly registers those facilities entitled to protection, and
3) provides protection to authorized services and registered facilities as specified in the Rules.

The Key Bridge System correctly identifies channels that are available for unlicensed White Space devices that operate in the TV band. This capability has been repeatedly verified by users with the Spectrum Explorer, Channel Calculator, and channel availability widgets incorporated into the various registration forms.

The Key Bridge System properly registers facilities entitled to protection through a number of streamlined and automated registration forms and work flows.

The Key Bridge System provides protection to authorized services and registered facilities as specified in the Rules. This have been repeatedly verified by users with the Spectrum Explorer, Channel Calculator and automated web services.

The trial had over 1,100 visits by approximately 600 unique users, with 58 registered accounts and 55 Wireless Service registrations. All of the reported comments were satisfactorily resolved. No issues were reported identifying non-compliance with the White Space Rules.

The System exhibited expected performance and very good reliability throughout the trial period.

Respectfully submitted,

/s/
Jesse Caulfield, President
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jesse.caulfield@keybridgeglobal.com

May 1, 2013

Attachment 1: Google Analytics

Key Bridge incorporated Google's Analytics utility into the White Space Portal to track user visits and other noteworthy statistics.

The analytics report follows.

Google Analytics

Go to this report

White Space - https://whitespace.keybridgeglobal.com/
All Web Site Data [DEFAULT]

My Dashboard

Mar 11, 2013 - Apr 24, 2013

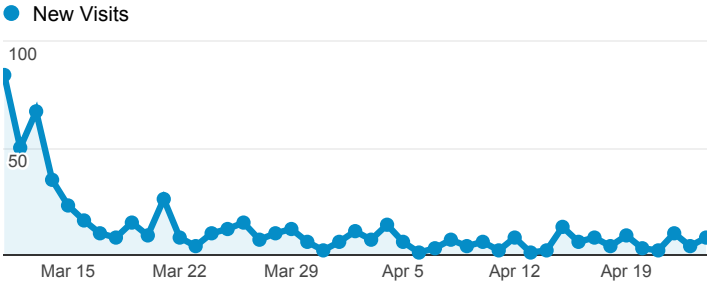
Advanced Segments | + Add Widget | Share | Email | Export | Customize Dashboard | Delete Dashboard

Unique User Visits

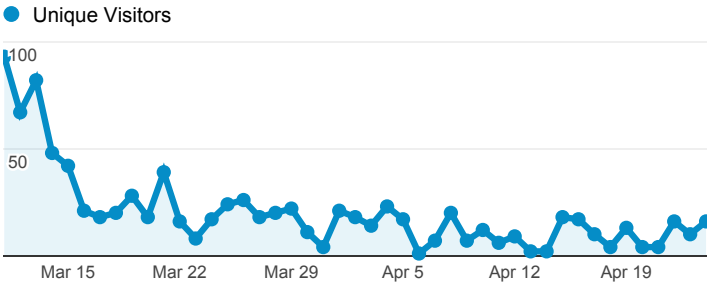
1,185

% of Total: **100.00% (1,185)**

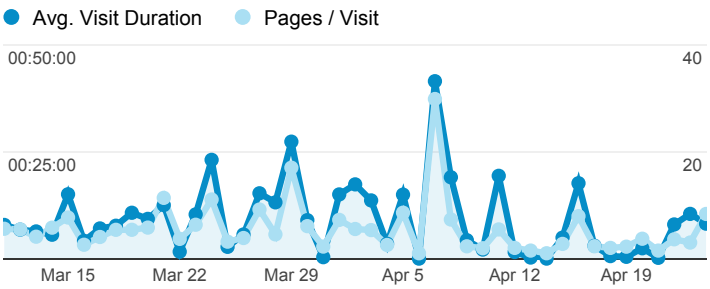
New Visits Daily



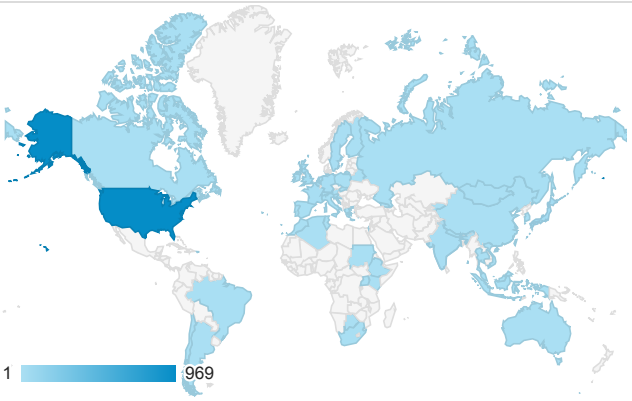
Unique Visitors Daily



Avg. Visit Duration and Pages / Visit



Visits By Country



Visits by Country / Territory

Country / Territory	Visits
United States	969
Japan	33
United Kingdom	24
Puerto Rico	14
Singapore	13
France	11
Germany	8
Sweden	8
India	7
Indonesia	6

Visits by Browser

Browser	Visits
Firefox	408
Internet Explorer	387
Chrome	213
Safari	158
Safari (in-app)	11
Android Browser	4

White Space - https://whitespace.keybridgeglobal.com/
All Web Site Data [DEFAULT]

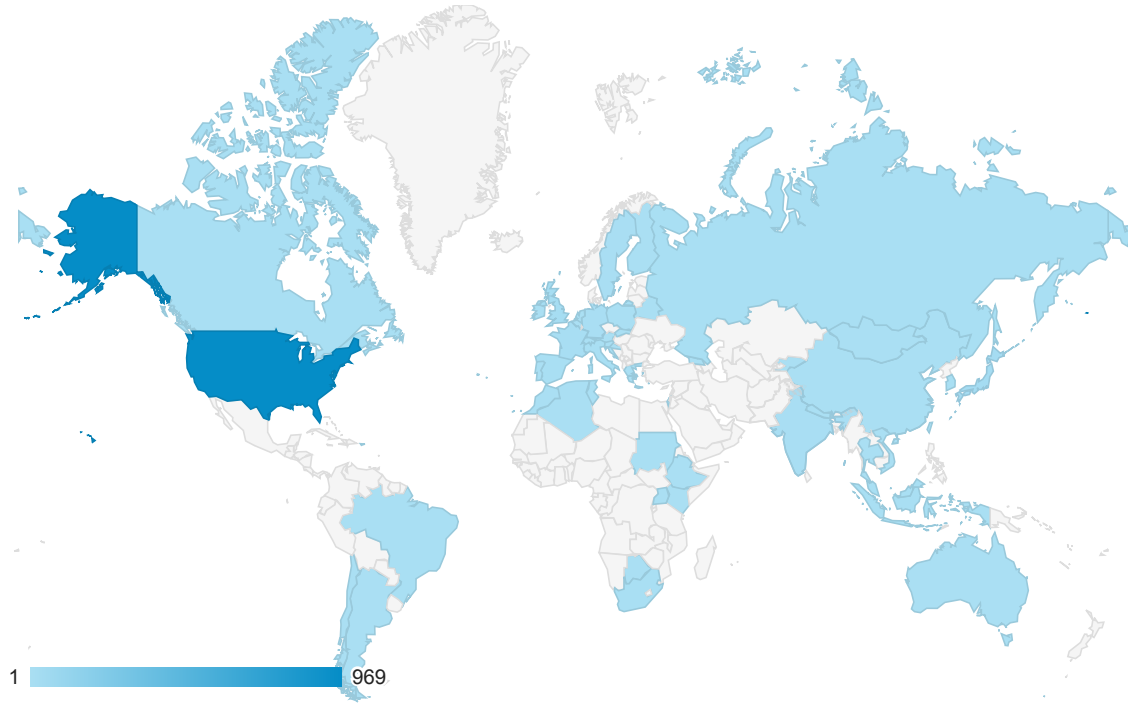
Location

Mar 11, 2013 - Apr 24, 2013

% of visits: 100.00%

Map Overlay

Site Usage



Visits	Pages / Visit	Avg. Visit Duration	% New Visits	Bounce Rate
1,185	**6.09**	**00:10:02**	**48.10%**	**42.45%**
% of Total: **100.00% (1,185)**	Site Avg: **6.09 (0.00%)**	Site Avg: **00:10:02 (0.00%)**	Site Avg: **48.10% (0.00%)**	Site Avg: **42.45% (0.00%)**

Country / Territory	Visits	Pages / Visit	Avg. Visit Duration	% New Visits	Bounce Rate
1. United States	**969**	6.85	00:11:30	43.86%	39.83%
2. Japan	**33**	2.30	00:00:49	51.52%	45.45%
3. United Kingdom	**24**	3.71	00:04:57	62.50%	58.33%
4. Puerto Rico	**14**	7.29	00:12:45	14.29%	28.57%
5. Singapore	**13**	2.62	00:09:53	23.08%	30.77%
6. France	**11**	1.91	00:04:40	100.00%	54.55%
7. Germany	**8**	1.62	00:03:24	87.50%	50.00%
8. Sweden	**8**	1.88	00:00:50	62.50%	50.00%
9. India	**7**	4.29	00:01:46	100.00%	57.14%
10. Indonesia	**6**	1.17	00:00:17	33.33%	83.33%

Rows 1 - 10 of 53

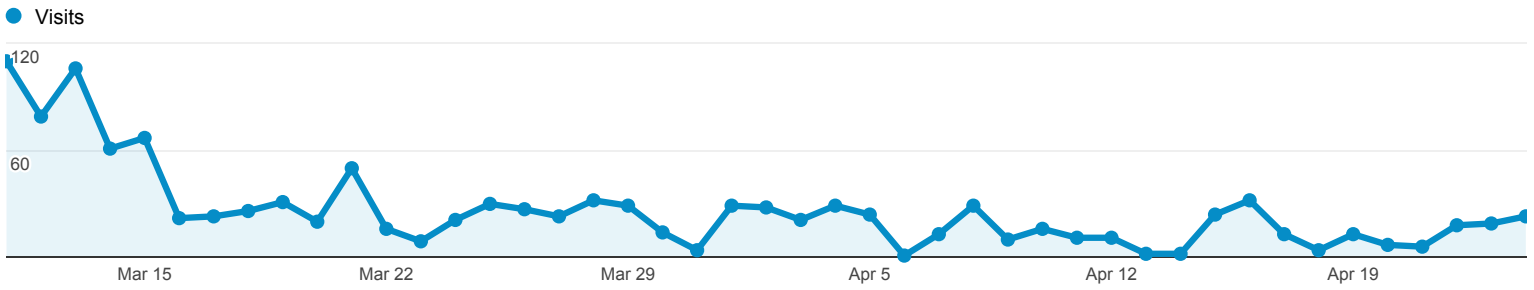
White Space - https://whitespace.keybridgeglobal.com/
All Web Site Data [DEFAULT]

Audience Overview

Mar 11, 2013 - Apr 24, 2013

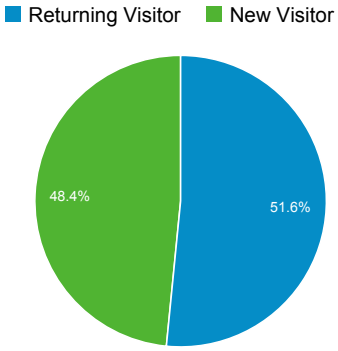
% of visits: 100.00%

Overview



604 people visited this site

Visits	1,185
Unique Visitors	604
Pageviews	7,213
Pages / Visit	6.09
Avg. Visit Duration	00:10:02
Bounce Rate	42.45%
% New Visits	48.10%



	Country / Territory	Visits	% Visits
1.	United States	969	81.77%
2.	Japan	33	2.78%
3.	United Kingdom	24	2.03%
4.	Puerto Rico	14	1.18%
5.	Singapore	13	1.10%
6.	France	11	0.93%
7.	Germany	8	0.68%
8.	Sweden	8	0.68%
9.	India	7	0.59%
10.	Indonesia	6	0.51%

view full report

Attachment 2: User Feedback

Prior to the trial 18 test entries were created in the ticketing system. Accordingly, the report shows trial-related ticket numbers beginning at 19.

Tickets resolutions shown in the index may be interpreted as follows:

Resolution	Explanation
Fixed	The reported issue was acknowledged resolved.
Duplicate	The reported issue is recognized as duplicating or being related to another open ticket, where the resolution of the other ticket also resolved this ticket.
WorksForMe	The reported issue could not be duplicated.

The ticket report follows.

Ticket Report Summary & Detail

	Resolution	ID	Short Description
	Fixed	19	Channel Accesability for Licensed LPBA Use
	WorksForMe	20	Key Bridge internal QA / system administration
	Fixed	22	Key Bridge internal QA / system administration
	Fixed	23	Channel selection
	Fixed	24	Wireless Registration Portal
	Fixed	25	Key Bridge internal QA / system administration
	Fixed	26	Key Bridge internal QA / system administration
	Fixed	27	Key Bridge internal QA / system administration
	Duplicate	21	Key Bridge internal QA / system administration
	Fixed	28	Varying calculated HAAT values for Buffalo, NY
	Fixed	29	Where is the TV Translator database
	Duplicate	32	Report for Jesse Caulfield
	Fixed	30	registering unlicensed device
	WorksForMe	31	Can't login
	Fixed	34	Internet explorer 10
	Duplicate	33	registering
	Fixed	35	Public Trial / FREQUENCY AVAILABLE LISTS
	Duplicate	45	OPERATING FREQUENCIES > "LP-AUX Available Channel(s)
	Fixed	36	Configure your contact information
	Fixed	37	Incorrect Channel Availability Lists for LPAUX Registration
	WorksForMe	38	Delayed Email Receipt
	Fixed	39	Event Date / Time Scheduling
	Duplicate	40	Effective Date / Expiration Date > EXCEEDS 365-Day Registration
	Fixed	41	Incorrect KBG Map Display vs Coordinate Entry (Farralone Islands, California)
	Fixed	42	Registrations Accepted @ National Radio Quiet Zones
	Fixed	43	Canadian Spectrum -
	Fixed	44	Unable to update contact information
	Fixed	46	LABELS / ANNOTATIONS
	Fixed	47	TV CHANNEL AVAILABLE @ ??? LOCATION / EXCLUSIVE WIRELESS MIC FREQUENCIES
	Fixed	48	LOCATION INPUT SELECTOR
	Duplicate	49	LOCATION INPUT SELECTOR / UNABLE TO FIND LOCATION (KENTUCKY DERBY-2013)
	Duplicate	50	AUTO LOCATION (INCORRECT INFORMATION)
	Fixed	51	Key Bridge internal QA / system administration
	Fixed	53	Spectrum Explorer - Map Rendering Takes a Long Time
	Fixed	54	Key Bridge internal QA / system administration
	Duplicate	52	Key Bridge internal QA / system administration
	Fixed	55	Key Bridge internal QA / system administration
	Fixed	56	Verify WSD Buffer Distance
	Fixed	57	Database Browser, View Record Details for TV stations returns error
	Fixed	58	Database Browser, ENUM-ASTR14
	Fixed	59	White Space Channel Calculator
	Fixed	60	Spectrum Explorer presents different available channels vs. Spectrum Bridge and Telcordia
	Duplicate	63	follow up to response on prior commet regarding different available channels
	Fixed	61	Key Bridge internal QA / system administration
	Fixed	62	Canada antenn height

Ticket 19: Channel Accesability for Licensed LPBA Use

Date Created
3/11/13 7:59 PM

Last Updated
3/11/13 8:10 PM

Admin History
3/15/13 1:33 AM: Resolution set to FIXED

jaypatterson (3/11/13)
I was unable to register many of the channels I use, as they were "already registered." Is it possible that I have bumped into myself, as I have registered in the Google test which started last week? When certified operation of the databases is up and running, will a user then choose which database to register with, avoiding such a conflict?

Other than that, your UI is magnificent! Very well thought out and easy to use, and certainly the best to date. If it is going to be "one user-one databse" I will crtainly reccommend that my brothers and sisters in the entertainment field use Key Bridge. May I expect a mobile ap for updating areas of use in the near future?

The one area that I could see an improvement - I was able to set a beginning and and end point in my expected use, but the format didn't seem to allow for the expected hours of the day (ie. my transmitters will be down from 1:00am to 6:00am every day during the period I specified, and down all day on the weekends)

Keep up the good work!

jesse (3/15/13)
Thank you for your questions and suggestions.

Re: Channels
Per FCC guidance only channels that are available for reservation at your location may be presented. Our system calculated the available channels for you based upon your location of interest. Availability would not be blocked by other wireless microphones as they are co-equal.

Re: Schedule
Please try configuring your schedule with recurrence. You will find a Recurrence link under the Start date input field which opens a dialog window. There is also a 'Schedule Help' link which provides additional explanations for this feature. The inputs are simple, but the system has a sophisticated scheduler that can match anything you might configure in Outlook.

Thank you for your kind words about the UI. It's the result of a lot of careful work and we appreciate your recognition.

No duplicates.

Ticket 23: Channel selection

Date Created
3/13/13 8:09 PM

Last Updated
3/13/13 8:10 PM

Admin History
3/15/13 1:44 AM: Resolution set to FIXED

autone (3/13/13)
There are channels which I am licensed for but unable to select in this registration. Why not?

jesse (3/15/13)
Hello,

Per FCC guidance only channels that are available for reservation at your location may be presented. Our system calculates the available channels for you based upon your location of interest. Availability is not be blocked by other wireless microphones as they are co-equal, but channels that are occupied by a television station or other primary user are not available for reservation by wireless microphones.

This has the practical effect of reducing duplicative protections as the area of interest is already not available for unlicensed use.

Does this answer your question?

Please visit our Spectrum Explorer application for a detailed survey of channel occupancy at your location of interest.

https://whitespace.keybridgeglobal.com/content/explore/spectrum/index.xhtml?autoLocate=true

No duplicates.

Ticket 24: Wireless Registration Portal

Date Created
3/17/13 2:18 PM

Last Updated
3/17/13 2:20 PM

Admin History
4/5/13 3:28 PM: Resolution set to FIXED

anonymous+WHITESPACE (3/17/13)
Upon using your portal, I find the following:

1. The portal is not intuitive to use, and leaves many questions regarding form sections requiring input for submission. For instance, requiring licensed users to provide their address is self-explanatory, but to require geographical coordinates of longitude and latitude is something not easily available to the average end-user. If such a field is required, I find it advisable that you consider linking a service to this site that automatically determines those coordinates for your end user. I will also note that in my test, I only provided my home address, which seemed to be sufficient to complete the test, so perhaps you should consider removing the longitude and latitude fields entirely.

2. The auto-populate service under the 'license authorization' portion of the portal did not function with my call sign. Upon deleting the 'DEMO' profile and typing in my full call sign, the system still failed to auto-populate my information. However, it did eventually recognize my information after I populated the field and then hit 'enter'. While this may seem trivial, any indication that an end-user is not in the system by failure to auto-populate is significant, and could potentially cause delays in registration of licensed users.

3. Most importantly of all, (understanding that this is still a test) I found that attempting to register wireless frequencies at my place of residence as a 'test' yielded only two available channels, both of which are of no use whatsoever to me for my work, and are not applicable to the wireless devices I currently own. No professional devices owned by me currently operate within the frequencies used by channels #3 & #4. If the available channels for licensed users will eventually change (expand to useful channels for licensed users), then that is excellent, because as of this moment the system would be useless to me in any fashion if the trial period were to expire while retaining existing functionality.

4. The system does not seem to allow for professional use of wireless devices on short notice. By this I mean specifically that many projects completed by professionals in my field are carried out in an impromptu fashion. For example, I might one day be at one location (location A) and then with very short notice be asked by production to move to another location (location B) many miles away - without time or capability in the field to register any new location information into this system. This brings to mind an ongoing question for myself as well as other users: What is the benefit, and/or the consequence of using a system that is currently incapable of behaving as flexibly as the end-user?

5. Perhaps you should consider making the registration process iDevice (mobile device) capable by creating an application that uses GPS to locate and auto-license the FCC licensed users within the location that they currently occupy. Consider that a licensed user moves from one location to another, but that there is no issue with this because the system would always know where the licensed user was at any given moment when the application was on and functional. This would allow the end-user to populate your system with the wireless device information for devices they currently own and use regularly, and all of those devices would then be free to operate within their technical limits anywhere the end-user happened to be working. This stands in contrast to a wireless device user specifying equipment to be used at a specific location and then updating that information several times a week or even several times per day. Have the system follow the user, not the user following the system.

Overall, it will also be helpful to create a tutorial for users who are new to the system and who require clarification as to the importance of their license acquisition and or unlicensed use of the system. At this point many professionals are simply not bothering with the system due to its perceived complexity, so any movement in the direction of simplicity and ease of use is to be desired.

And as a final note on the overall usability of this system: Imagine if you received a license to drive your car, but every time you had to go to the gas station (location A) you had to populate that information in an online database proving you were abiding by the law. Then off to the grocery store (location B); same thing - whip out the computer before you can drive from the gas station to the grocery store, and then back home (location C); same thing. It seems absurd that we go to all of the effort to become licensed wireless device users and then we have to deal with a system like this at all. Particularly when there is no indication whatsoever of enforcement. If there were a team of police who would arrive on location and shut down non-licensed users then one might be able to see the advantage of this system, but as of yet there is no indication that this is the case.

Thank you for your time reviewing my comments.

jesse (4/5/13)
Thank you for your thoughtful comments. We have made a number of improvements based upon your suggestions.

We have enabled Key Bridge AutoLocation via a 'Find Me' link or button in the Spectrum Explorer application and on the wireless microphone registration forms. AutoLocation attempts to identify your current geographic location and automatically enters your coordinates into the form for you.

The Operating Location input widget has been updates to include a slippy map. This feature enables you to visually identify your current location by clicking and dragging a map. When you lock-in your location using the map the coordinates and address are automatically calculated for you. See the Map tab to the location search widget to support point and click location selection.

We are unable to replicate your described issue with the license import utility. For context: the license auto-complete widget draws from a very large, consolidated database of FCC records. It is possible that the system was not able to find an construct a response to your license query in a timely manner. That the license was available when you returned indicates this may be the case, as on the second attempt the information was already available.

We hope that with some practice you will find the Portal strikes a good balance between helpful automation for new users and robust features for professional users alike, and that you are able to complete all your needed registrations quickly and efficiently.

No duplicates.

Ticket 28: Varying calculated HAAT values for Buffalo, NY

Date Created
3/19/13 10:03 AM

Last Updated
3/19/13 10:06 AM

Admin History
3/26/13 9:01 AM: Status set to IN_PROGRESS
4/1/13 8:58 AM: Resolution set to FIXED

jesse.caulfield (3/19/13)
From B.Franca via FCC: All administrators appear to show differrent calculated HAAT values for Buffalo, NY, ranging from -1.8m to 2.3m. Key Bridge shows -71m.

Coordinate is [42.886446, -78.878369] (NAD_83).

jesse (3/26/13)
The Portal has been updated to use the National Elevation Dataset 1-degree (NED1) digital terrain model when calculating White Space channel availability.

As background: NED1 data provides nationwide resolutions of 1 arc-second (about 30 meters). Alaska resolution is variable, but typically 2-arc-second. Territory coverage and resolution is also variable.

Because the NED1 data set does not provide complete coverage for all United States territories the Key Bridge White Space System is configured to fail gracefully as follows: where the National Elevation Dataset does not provides coverage the System falls back to the Global Land One-km Base Elevation Project (GLOBE) data set with 30-arc-second resolution.

jesse (4/1/13)
Confirming average terrain elevation for Buffalo, NY now calculates as -2 meters.

No duplicates.

Ticket 29: Where is the TV Translator database

Date Created
3/19/13 4:43 PM

Last Updated
3/19/13 4:47 PM

Admin History
4/1/13 8:07 AM: Resolution set to FIXED

james.mcdermaid (3/19/13)
Please advise me where the database resides for TV Translators. I find a number of ours (FOX-TV) do not have a protected input channel.

jesse (4/1/13)
This issue was resolved via email.

Below is a summary of the correspondence.

Question: In looking at the 45 day trial of “Key Bridge” White Space application I find several licensed TV Translators that are related to our two TV stations (KSAZ and KUTP Phoenix AZ) are not properly protected both for input channel and adjacent channel.

Key Bridge Answer: The wireless service records (and protected contours) in our database are automatically generated based upon your registered information in the FCC's database (CDBS), and all corrections must be routed through the FCC. Question referred to FCC for more details.

KSAZ
CDBS : 1423052 Ch 10 TV Full Service Digital
CDBS : 1057166 Ch 31 TV Auxiliary Transmitting Antenna Digital
CDBS : 1316872 Ch 10 TV Auxiliary Transmitting Antenna Digital

KUTP
CDBS : 1242402 Ch 26 TV Full Service Digital
CDBS : 1331783 Ch 26 TV Auxiliary Transmitting Antenna Digital

FCC Answer: This concerns input channels to TV translators, not TV station auxiliary transmitters. The translators to be protected are K39IT-D and K28CW-D.

CDBS records indicate station KSAZ-TV as primary station for K39IT-D with input channel 10 and for K28CW-D, the primary station KUTP, channel 26.

In cases where a translator has multiple input channels, we will very soon launch our new TV translator/low power TV input channel update system for public use. That system will allow licensees to specify up to 10 input channels for each TV translator/LPTV station.

Question: Am I to understand that the protection is only afforded to licensed Digital TV Translators and not licensed analog translators?

FCC Answer: Both digital and analog TV translators are to be protected from interference from TVWS devices.

Question: After a Digital Construction Permit is completed for the translators and the license to cover is finally granted, then and only then do they qualify for protection?

FCC Answer: Protection is afforded to analog and digital stations that have submitted an application for a license to cover, that are licensed and/or have an STA.

Question: There is no mention of input channel in any of the actual licenses. How is this information recorded?

FCC Answer: If the application for the station included an input channel (or was provided later in an update to the station’s records), that information is recorded in the CDBS database and is to be used by the TVWS databases in providing protection of TV services.

Ticket 32 (Duplicate to 29) : Report for Jesse Caulfield

Date Created
3/20/13 6:19 PM

Last Updated
3/20/13 6:34 PM

Admin History
4/1/13 7:57 AM: Set as duplicate to 29
4/1/13 7:57 AM: Resolution set to WORKSFORME
4/1/13 7:57 AM: Set as duplicate to 29

james.mcdermaid (3/20/13)
Coordinate selector did work no change from street address.

Primary full power TV stations have a receive site called "Smoth Peak" there is a BAS license for this site. It fee the s Mojave County Arizona translator network Editing on this page has become strange as well.

jesse (4/1/13)
Unable to replicate. Discussed with user off-line. This is a duplicate of 29.

Ticket 30: registering unlicensed device

Date Created
3/19/13 5:00 PM

Last Updated
3/19/13 5:08 PM

Admin History
3/21/13 4:54 PM: Status set to CONFIRMED
4/1/13 8:10 AM: Resolution set to FIXED

jonathan (3/19/13)
After receiving a call sign equivalent, still unable to register a device, I can't fill in an FCC call sign where there is none because there are no devices type accepted. we have an experimental license from the FCC and are currently testing our devices in the field.

I'm writing the automation code for channel avail. and would prefer to use your database. this device is low powered, unlicensed & fixed. maybe I've read something wrong, but I was under the impression that we did not need a type accepted device to query your database, just a call sign from you guys. Am I doing something wrong?

jesse (3/21/13)
Hello and thank you for your question. If I understand correctly: you have an experimental device and wish to program it to query the Key Bridge System for White Space channels. If that is so then you will want to access our White Space API which provides developer access to all of our web services.

https://api.keybridgeglobal.com

The web service for White Space devices is free. Here is a directly link to the documentation for that web service.

https://api.keybridgeglobal.com/documentation/whitespace/find.xhtml

Your application can connect directly to our API after you register with the API server and receive an OAuth credential. Here is the link for registering an application (we consider the software client on your device an 'application').

https://api.keybridgeglobal.com/api/account/application/register.xhtml

You do not require an FCC call sign or call-sign equivalent for this. The system does require a type-certified FCC ID however.

Hopefully I understood correctly and this answers your question. If Yes, then please submit a comment with your experimental device IDs and if everything checks out we will authenticate them for access. Cheers!

No duplicates.

Ticket 31: Can't login

Date Created
3/20/13 11:22 AM

Last Updated
3/20/13 11:24 AM

Admin History
3/24/13 8:00 AM: Resolution set to WORKSFORME

anonymous+WHITESPACE (3/20/13)
I can't login keeps saying either password is incorrect or username wrong. I have done the validation and reset my password but still can't get in.

jesse (3/24/13)
The user name field must be entered exactly as you entered is upon account creation.

The password field must be entered exactly as you entered it upon account creation or as provided from the password reset utility.

Please ensure that you are not adding any extra spaces or hidden characters. This can happen when copying and pasting the user name and password from another file.

No duplicates.

Ticket 34: Internet explorer 10

Date Created
3/21/13 11:10 AM

Last Updated
3/21/13 11:14 AM

Admin History
3/21/13 4:35 PM: Status set to IN_PROGRESS
4/8/13 12:57 PM: Resolution set to FIXED

chuck.rozner (3/21/13)
I could not use the site with Internet explorer 10. Some fields would not populate and I couldn't import my licenses. I also tried to send a report and the description box did not show up. I finally tried Mozilla and it worked.

jesse (3/21/13)
Hello and thank you for your comment.

We have tested extensively for IE 6, 7, 8 and 9, and I am unaware of any issues with IE10, but it is certainly possible that you have found some, so thank you for taking the time to tell us.

We will re-test and update the system if any updates are needed. I will also follow up with you to confirm our findings and tell you if any changes were made.

jesse (4/1/13)
Confirm that the license-select autoComplete renders correctly with IE 6, 7, 8, 9 but does not render correctly with IE10.

jesse (4/8/13)
IE10 does not appear to fire JavaScript events when the user enters their call sign. We've tried and tried, but no amount of reasonable hacking appears to fix this.

IE does however support different page rendering engines. We have added instructions on this page for IE to use the IE8 rendering engine, which appears to resolve this issue. The license auto-complete widget works for our combination of Windows 7 + IE10.

Marking as fixed. Note that a (non-default) user configuration can override the portal request and cause this error to resurface. That scenario is beyond our control.

Ticket 33 (Duplicate to 34) : registering

Date Created
3/21/13 10:30 AM

Last Updated
3/21/13 10:31 AM

Admin History
4/1/13 8:10 AM: Set as duplicate to 34
4/23/13 2:04 PM: Resolution set to WORKSFORME

chuck.rozner (3/21/13)
I can not register my LP AUX licenses into the database. I also can not find registered users in my area.

jesse (5/1/13)
Duplicate of 34. This ticket was included in response to 34.

jesse (5/1/13)
Duplicate of 34. This ticket was included in response to 34.

Ticket 35: Public Trial / FREQUENCY AVAILABLE LISTS

Date Created
3/23/13 5:24 PM

Last Updated
3/23/13 5:26 PM

Admin History
3/28/13 9:01 AM: Resolution set to FIXED

kevin.parrish (3/23/13)
The size and clarity of the "Frequency Availability List" needs improvement or perhaps a change in font. Not what I expected to see.. poor clarity, colors, etc..

jesse (3/28/13)
Thank you for your suggestions. We have made the following changes to the LPAUX available channel list:

- increase font size
- change font color to improve readability
- change available channel row color to increase contrast
- change reserved channel row color to increase contrast

Ticket 45 (Duplicate to 35) : OPERATING FREQUENCIES > "LP-AUX Available Channel(s)

Date Created
3/29/13 9:51 AM

Last Updated
3/29/13 9:57 AM

Admin History
4/1/13 9:23 AM: Resolution set to FIXED
4/11/13 8:55 AM: Set as duplicate to 35

kevin.parrish (3/29/13)
I submitted a report / request suggesting that you change the font, change the size of font and "enhance clarity" of the following fields:

OPERATING FREQUENCIES: "LP-AUX AVAILABLE CHANNEL(s)"

An automated reply message send by KBG yesterday indicated that this request was processed and corrected. Within the past 5 minutes while submitting a protected entity registration to the KBG "Public Trial" system I noticed "no apparent changes" have been made ?

jesse (4/1/13)
Apologies: the ticket was marked FIXED before the weekly portal build was deployed.

You will now see the updated 'Channel Availability' widget. Please let us know what you think and if it can be improved further. Thank you!

Ticket 36: Configure your contact information

Date Created
3/24/13 7:34 AM

Last Updated
3/24/13 7:35 AM

Admin History
3/24/13 7:45 AM: Resolution set to FIXED
3/28/13 8:48 AM: CC add kevin.parrish

kevin.parrish (3/24/13)
At the "configure your contact information" and the system will NOT recognize "Long Island City, NY 11101".

The message reports info saved and the immediately returns a RED X "The City is required"... Unable to proceed to > NEXT STEPS

jesse (3/24/13)
The contact information widget attempts to geocode the address to ensure that only valid addresses are entered plus that a consistent format is kept in the database. This can prevent address updates if the user-provided address is not recognized.

We have relaxed the geocoding requirement for user-entered contact information and note that your address is now recognized. Please confirm, and thank you.

No duplicates.

Ticket 37: Incorrect Channel Availability Lists for LPAUX Registration

Date Created
3/24/13 7:35 AM

Last Updated
3/24/13 7:36 AM

Admin History
3/24/13 7:48 AM: Status set to IN_PROGRESS
4/1/13 8:25 AM: CC add kevin.parrish
4/1/13 8:25 AM: Resolution set to FIXED
5/1/13 7:55 AM: CC remove kevin.parrish

kevin.parrish (3/24/13)
When a licensed entity submits a registration for a specific TV channel, on a specific date and time, it appears that the system will then remove the selected TV channels from the list of any available channels.

See my test event registrations for 1 La Avazada and 250 Palo Alto Drive, San Francisco, CA. Both addresses are for the Sutro Tower. I submitted registrations using both addresses, when I went back and tried selecting the same TV channel for registration at La Avenzada or Palo Alto locations it was removed from the list ???

So if NBC wanted to submit a registration for 30 Rock using TV-22 and FOX wanted to submit a registration at 45 Rock for TV-22 the table of available channels would not show TV-22 as being available for registration to FOX. This doesn't seem correct.... Am I missing something or is something wrong with your system ????

It seems that all database providers should accept (multiple) protected entity registrations for the same TV channel at same location on same date. Very concerned about this.. Please advise. THNX, KP

jesse (3/24/13)
There is a bug in the Channel Availability Lists for LPAUX Registration. Other LPAUX White Space contours should not block channel availability.

jesse (4/1/13)
Thank you for your help in identifying this bug. The Available Channels widget within the LPAUX registration forms (Licensed and Unlicensed) has been updated and corrected. Channel reservation availability should (and now is) only blocked by the following criterion:

- WSD operation is forbidden by rule (registration not required): Channels 2, 3, 37
- Co-channel intersection of operating location with protected entity contour
    - Excludes LPAUX contours

Additionally, please note that WSD channel availability incorporates a separation buffer from protected entity contours whereas LPAUX availability does not. [38.933868, -77.177260] (WGS_84) provides an interesting location to query the Spectrum Explorer to view the effects of this Rule. Specifically note that at the location of interest channel 45 is blocked for unlicensed White Space devices but available for LPAUX operation.

- White Space Spectrum Explorer

No duplicates.

Ticket 38: Delayed Email Receipt

Date Created
3/24/13 7:36 AM

Last Updated
3/24/13 7:37 AM

Admin History
3/24/13 7:55 AM: Resolution set to WORKSFORME

kevin.parrish (3/24/13)
It took approximately 20 minutes to receive an email receipt after submitting the test registration.

jesse (3/24/13)
Unable to replicate. We typically receive registration receipts less than one minute from submission. Suspect the delay may be caused by external factors not under our control.

No duplicates.

Ticket 39: Event Date / Time Scheduling

Date Created
3/24/13 3:41 PM

Last Updated
3/24/13 3:45 PM

Admin History
4/1/13 8:31 AM: CC add kevin.parrish
4/1/13 8:31 AM: CC add kevin.parrish
4/1/13 8:32 AM: CC remove kevin.parrish
4/1/13 8:31 AM: CC add kevin.parrish
4/1/13 8:32 AM: CC remove kevin.parrish
4/1/13 8:34 AM: Resolution set to FIXED

kevin.parrish (3/24/13)
I intentionally submitted a protected entity registration in KNAPP, WI for a specific START and ENDING time that had already elapsed / expired. The system accepted my registration even though the start & stop times had already passed.

Tracking ID: 7c326bb2-6404-4672-88ed-55a0db2a691e

jesse (4/1/13)
Thank you for your report and your help in finding this error! We confirm this is not correct behavior. The Scheduling widget has been updated to correctly include a minimum begin date.

- The minimum begin date is (now) set to the current time within the user's time zone.
- The maximum end dates are also set in the user's time zone according to the wireless service type. These are:
  - LPAUX: +1 year
  - MVPD Receivers: +1 year
  - Temp BAS Links: +720 hours = 30 days
  - Fixed WSD: +1 year

Ticket 40 (Duplicate to 39) : Effective Date / Expiration Date > EXCEEDS 365-Day Registration

Date Created
3/24/13 4:05 PM

Last Updated
3/24/13 4:08 PM

Admin History
4/1/13 8:35 AM: Resolution set to FIXED
4/11/13 11:02 AM: Set as duplicate to 39

kevin.parrish (3/24/13)
I intentionally submitted a registration that exceeded 365-days and the system accepted the faulty registration without incident.

See ROSWELL, NM # 3 registration for additional info.

jesse (4/1/13)
Fixed. This references the same issue as was addressed and resolved in 39.

Ticket 41: Incorrect KBG Map Display vs Coordinate Entry (Farralone Islands, California)

Date Created
3/24/13 4:25 PM

Last Updated
3/24/13 4:33 PM

Admin History
4/1/13 8:38 AM: Status set to IN_PROGRESS
4/1/13 8:38 AM: Status set to IN_PROGRESS
4/1/13 8:44 AM: Status set to CONFIRMED
4/8/13 10:55 AM: Resolution set to FIXED

kevin.parrish (3/24/13)
I submitted a test registration for the Farralone Islands, CA which is a National Marine Sanctuary 35 miles West of San Francisco, California. The location was entered using coordinates obtained from Google Earth Professional Edition.

Farralone Islands National Marine Sanctuary

37-43-40.02 N
123-01-56.15 W

The system accepted my registration however the KBG map displayed a location in downtown San Francisco which is not correct. Suggest you review this test registration aka; Farralone Islands, CA Reg # 2 of 2 to ensure accuracy of coordinates & map display functions.

jesse (4/1/13)
Noting DMS coordinates converted to decimal degrees: 37.727783, -123.032264

jesse (4/1/13)
I am able to duplicate this behavior. There appears to be a bug in the geometry handler: the coordinate is correctly located on the Middle Farralon Island but the contour is centered and located in downtown San Francisco.

jesse (4/8/13)
Fixed in 04/08 build.

The error was caused by a data processing (geo-coding) error that only surfaces when the location of interest is [very] far from any known street address. The encoded geometry is now tightly coupled to the user-provided input coordinate regardless of geo-coding status.

No duplicates.

Ticket 42: Registrations Accepted @ National Radio Quiet Zones

Date Created
3/24/13 6:24 PM

Last Updated
3/24/13 6:35 PM

Admin History
4/2/13 7:49 AM: Resolution set to WORKSFORME
4/11/13 9:35 AM: Resolution set to FIXED

kevin.parrish (3/24/13)
I was able to submit 2 licensed protected entity registrations for The Owens Valley California (VLBA) and Sugar Grove, West Virginia "Radio Quiet Zones"...

As you may know these locations are part of several "radio quiet zones" located around the United States consisting of Space Observatories & Military Facilities. What's interesting is that your system knew about Table Mountain (TMRZ) and would NOT accept my registration for that site. Additionally the KBG test site also knew about Mauna Kea, Hawaii and refused my registration for that site as well.

It would be a very good idea for you to test the other sites in order to make sure your system will protect those locations. I will email you the registrations that were accepted for further review.

jesse (4/2/13)
Unable to duplicate. All radio receiving areas appear to be correctly protected.

jesse (4/11/13)
Follow up: To provide additional information and context information to the user we have updated the *LP-AUX Available Channel(s)* widget to display an error message when no channels are available for registration at the user-provided operating location.

Please use the exact coordinates for any radio receiving station to test this capability. For example, the Allen Telescope Array at [40.817778, -121.473333] (WGS_84).

No duplicates.

Ticket 43: Canadian Spectrum -

Date Created
3/26/13 9:50 AM

Last Updated
3/26/13 9:52 AM

Admin History
4/1/13 9:10 AM: Resolution set to FIXED

william.fretts (3/26/13)
Hi from the Great White North - I'm sorry to see the Canadian spectrum demo data removed from the trial, although I understand the likely reasons for it. We do have vast areas of white space you know!

jesse (4/1/13)
Thank you for your comment. We do maintain a comprehensive database of Canadian stations available under the [Resources] tab of our API portal. Select Resources > Industry Canada BDBS (sign in required).

You can also view contours of Canadian stations located adjacent to the US border by selecting locations within the United States and near the border in our Spectrum Explorer application.

We look forward to providing White Space availability information and services for Canada as soon as allowed by the Canadian Government. Cheers!

- White Space Spectrum Explorer

No duplicates.

Ticket 44: Unable to update contact information

Date Created
3/27/13 8:56 AM

Last Updated
3/27/13 8:58 AM

Admin History
4/1/13 9:16 AM: CC add kevin.parrish
4/1/13 9:16 AM: CC add kevin.parrish
4/1/13 9:18 AM: Resolution set to FIXED

jesse.caulfield (3/27/13)
Via email: I am attempting to change my contact info to show 30 Rock address. When I enter what I want and click "save" the system says X Please set your contact info, including address and phone numbers. I DID.... several times, the system reports (!) Your contact information has been successfully updated. The ERROR MESSAGE also appears at the same time. Seems strange ????

Something isn't correct with "Introduction and account configuration"....

jesse (4/1/13)
Unable to replicate. However, it is possible that the contact information widget geocoder could not locate your address and failed. The contact information widget has therefore been updated to relax the geocoding requirement and to accept all valid user-provided street addresses.

Also, while the Setup wizard uses the same contact information widget you may find it more convenient to update your contact information using the 'Contact Info' resource located under the [Account] menu tab or directly from the link below (sign in required)

- My Contact Information

No duplicates.

Ticket 46: LABELS / ANNOTATIONS

Date Created
3/29/13 9:57 AM

Last Updated
3/29/13 10:00 AM

Admin History
4/8/13 10:55 AM: Resolution set to FIXED

kevin.parrish (3/29/13)
I am unable to see any "annotations" or "labels" that were entered during the protected entity registration process on the wireless service "registration receipt" ?? The data field reads: NONE

jesse (4/8/13)
Annotation tables have been added to the displayed and emailed registration receipt.

Please note that annotation information is for the benefit and convenience of you, the user, to help organize, track and identify your registration records. This information is not otherwise used by the White Space system.

No duplicates.

Ticket 47: TV CHANNEL AVAILABLE @ ??? LOCATION / EXCLUSIVE WIRELESS MIC FREQUENCIES

Date Created
3/29/13 2:38 PM

Last Updated
3/29/13 3:08 PM

Admin History
4/1/13 9:25 AM: Status set to IN_PROGRESS
4/8/13 10:59 AM: Resolution set to FIXED

kevin.parrish (3/29/13)
I notice that the KBG Public Trial Test System does not permit the inclusion of selecting "exclusive" TV Channels during the registration process.

Spectrum Bridge allows the person registering the opportunity to also check the box and include TV channels "exclusive" to wireless microphones.

My feeling is that KBG should do the same because it allows the FCC an opportunity to collect additional LP-Aux / White Space spectrum data for all "available" TV channels which the wireless mic user is operating on at specific registered sites.

The point being that it's a good thing, I believe, to include the ability to register any legally "available" television channel at the intended location of use, regardless if it's listed as exclusive or not.

Again, it's my personal opinion that data collection which demonstrates the "true and actual use" of licensed and un-licensed Low-Power Auxiliary Wireless Microphones is needed for FCC spectrum planning and regulatory issues.

Don't know if this is just a KBG system programming item or if the FCC frowns upon doing this ?

jesse (4/1/13)
Thank you for the suggestion. Its seems like a good idea. We have referred this question to the FCC for further guidance.

jesse (4/1/13)
The FCC reports that registrations on the reserved channels are allowed even though such registrations have no real protective benefit.

We agree that registration options should be consistent across administrators. It is easy for us to make the necessary changes, and so we will update our system to allow registrations on the reserved channels.

Thank you for identifying this difference and for your comment!

jesse (4/8/13)
Registrations on the two reserved wireless microphone channels has been enabled.

To ensure consistency across all registration systems the FCC will also issue a recommendation to all White Space administrators to allow this capability.

No duplicates.

Ticket 48: LOCATION INPUT SELECTOR

Date Created
4/1/13 8:14 AM

Last Updated
4/1/13 8:21 AM

Admin History
4/8/13 11:12 AM: Status set to IN_PROGRESS
4/8/13 11:20 AM: Resolution set to FIXED

kevin.parrish (4/1/13)
When attempting a test registration this morning for the Kentucky Derby the system believes my location is Potwin, Kansas? A quick check of my account information reveals that my stored account location is 201 Varick Street, New York, NY which is the address of the FCC field office here in NYC.

The KBG Public Trial Test system will not accept the location: 30 Rockefeller Plaza, New York, NY 10112 so I just tried using the FCC field Office location in order to complete the required data fields.

For today's test registration at Churchill Downs (Kentucky Derby) the system automatically based by location as being: 8636-8692 Northwest 120th Street, Potwin, KS 67123.

jesse (4/8/13)
Thank you for identifying this unexpected behavior. It appears that the AutoLocate coordinates are over-riding user-input coordinates.

This has been fixed. The coordinates identified by AutoLocation have been separated from user-provided location information (address, coordinate, geometry, etc.)

The AutoLocation feature, which is triggered by the 'Find Me' command within the LPAUX registration forms, attempts to location the user first by a user-provided GPS capability if available. This capability is available on most modern laptops and mobile platforms (e.g. tablets, etc.) and if available the user will be presented with a request for permission to share their location.

If no GPS information is available (or the user declines to share their location) then the System will attempt to locate the user by their IP address. This fall-back method works well for fixed users (home and office) but can be problematic for devices using a mobile or 3G network. This is because most mobile operators back haul user traffic to a centralized information security infrastructure.

Speculating about your scenario: we have experienced that users accessing the Portal via an AT&T 3G link occasionally present IP addresses assigned to a point-of-presence in Potwin, KS.

The coordinates identified by AutoLocation have been separated from user-provided location information (address, coordinate, geometry, etc.)

When a user clicks the 'Find Me' command the location input is updated to where the system believes the user to be.

As a corrective and to provide additional user information and context we have added a MAP tab to the Operating Location input widget, which may be used to verify, tune or reject the AutoLocation provided location.

jesse (4/8/13)
Confirming that the user contact info accepts '30 Rockefeller Plaza, New York, NY 10112'. (This was corrected in Ticket 36).

Ticket 49 (Duplicate to 48) : LOCATION INPUT SELECTOR / UNABLE TO FIND LOCATION (KENTUCKY DERBY-2013)

Date Created
4/1/13 8:21 AM

Last Updated
4/1/13 8:23 AM

Admin History
4/8/13 11:01 AM: Set as duplicate to 48
4/8/13 11:15 AM: Status set to IN_PROGRESS
4/11/13 8:51 AM: Resolution set to FIXED

kevin.parrish (4/1/13)
The system does not recognize the following address for Churchill Downs (Kentucky Derby) 700 Central Avenue, Louisville, KY 40274

jesse (4/8/13)
There appears to be a conflict between AutoLocation and user-provided addresses. After AutoLocation is triggered then user-provided addresses (but not coordinates) appear to be ignored.

jesse (4/11/13)
Fixed. AutoLocation has been decoupled from the user-input location.

Ticket 50 (Duplicate to 48) : AUTO LOCATION (INCORRECT INFORMATION)

Date Created
4/1/13 8:24 AM

Last Updated
4/1/13 8:58 AM

Admin History
4/8/13 11:02 AM: Set as duplicate to 48
4/8/13 11:17 AM: Status set to IN_PROGRESS
4/11/13 8:50 AM: Resolution set to FIXED

kevin.parrish (4/1/13)
A supplemental bug report regarding "Auto Location" function issue: The system continually believes my location is in Potwin, Kansas: 8636-8692 Northwest 120th Street, Potwin, KS, 67123

My Comment & Suggestion: The "Auto Location" feature may actually be troublesome and cause an un-intended error by falsely registring an incorrect location based upon automatic (false) selections of available TV Channels.

Perhaps people using the KBG system may not catch or fully understand the automated process or the true event location they're attempting to register since the system uses "auto location" / "location input selector" as the automated basis for spectrum availability searches?

I offer the suggestion that "Auto Location" and " Auto Location Input" functionality be disabled so they are (not) tied together and "automatically" form the basis of any initial spectrum availability search by the system or user. Yes, I do agree that "Auto Location" serves a usefull purpose when used "only" to support the auto completion of a registrants account address and related information to properly identify whos' making the registration.

jesse (4/8/13)
Potwin, KS appears to be an AT&T Internet point-of-presence.

jesse (4/11/13)
Fixed. AutoLocation has been decoupled from the user-input location and configured not to run automatically, but rather only when a user clicks the 'Find Me' link on the registration form. Hopefully this will reduce or eliminate user confusion.

Ticket 53: Spectrum Explorer - Map Rendering Takes a Long Time

Date Created
4/2/13 10:19 AM

Last Updated
4/2/13 10:20 AM

Admin History
4/3/13 8:09 AM: Resolution set to FIXED

jesse.caulfield (4/2/13)
From an end user via email: I accessed the channel calculator feature and entered “1365 East 57th St., Brooklyn, NY 11234”.

It took about 5 minutes of calculating, but the system did give me results and they look accurate. I think that the reason the calculator took so long it that it has to create map contours for a large number of protected facilities. When I zoomed in on the map to try and see if the street was correct, it took a long time for the system to generate the zoomed-in map.

jesse (4/3/13)
The Spectrum Explorer application has been updated to reduce the load on a user's computer and the amount of data transferred between the Key Bridge server and the client browser. These changes should provide an improved user experience and application performance. Implemented changes include:

- Selectable rows in the channel list data table. You may now select a row to view channel details instead of the 'search' icon.
- Eliminate the "spider nest". At the conclusion of a search the previous version would plot all the contours identified at the user's query location. This was a large number of contours and provided no useful information.

Current query and processing times on the test system are between 1 and 45 seconds, and vary widely based upon the number of white space contours that must be inspected. The production system (available after the trial) will have significantly more processing power and tests at between 1 and 5 seconds maximum.

No duplicates.

Ticket 56: Verify WSD Buffer Distance

Date Created
4/16/13 8:23 AM

Last Updated
4/16/13 8:24 AM

Admin History
4/16/13 8:42 AM: Resolution set to WORKSFORME
4/16/13 3:50 PM: Resolution set to FIXED

jesse.caulfield (4/16/13)
From B.Franca via FCC: Point Loma, CA [32.601827, -117.228309] (WGS_84) CH 22 and 23 are blocked by MX stations. WSD buffer appears to be too large.

jesse (4/16/13)
This point is located at the peak of a central ridge along the peninsula. We show the elevation at 97.0 m AMSL with a calculated HAAT value of 83.6 m.
A standard 3 meter antenna provides an antenna HAAT value of 86.3 m and the separation distance is therefore calculated using the GT75LT100 ("Greater than 75 and less than 100 meter") values of 2.1 km adjacent and 21.1 km co-channel.

As reference:

- The Telcordia system shows a HAAT value of 82.3m and their channel list matches ours.
- The Spectrum Bridge system provides a HAAT value of 80.3 m and their channel list matches ours.
- The Google system does not provide a HAAT value but their channel list matches ours.

jesse (4/16/13)
Fixed. An earlier bug fix had introduced a logic error in the channel calculator when displaying availability results for full power (100 mW) personal portable devices. This error was user-interface related and did not affect other WSD configurations.

No duplicates.

Ticket 57: Database Browser, View Record Details for TV stations returns error

Date Created
4/16/13 12:56 PM

Last Updated
4/16/13 12:57 PM

Admin History
4/16/13 3:51 PM: Resolution set to FIXED

anonymous+WHITESPACE (4/16/13)
Using the Database Browser, filtered to call sign WFTV, selected the first entry, clicked on the transmitter icon on the map, and clicked on View Record Details. A new tab opens but presents an HTTP 500 error.

Tried this with multiple TV station call signs, received the same error.
Tried both IE9 and Chrome, received the same error. For other types of entries, e.g., Radio Astronomy, Offshore RadioTelephone, the new tab returns a Wireless Services Detail Page for the call sign.

Error details: https://whitespace.keybridgeglobal.com/content/explore/database/wsif/detail.xhtml?uuid=c049144e-17bf-4b72-b0c7-d4a2d2bcade9

```
HTTP Status 500 -
--------------------------------------------------------------
type Exception report message
description The server encountered an internal error () that prevented it from fulfilling this
request....
--------------------------------------------------------------
```

jesse (4/16/13)
Thank you for this report. The detail page was recently updated to provide more information and context but a coding error was inadvertently introduced into the page that prevented it from displaying properly. The detail page has been corrected.

No duplicates.

Ticket 58: Database Browser, ENUM-ASTR14

Date Created
4/16/13 1:05 PM

Last Updated
4/16/13 1:11 PM

Admin History
4/16/13 4:20 PM: Resolution set to FIXED

anonymous+WHITESPACE (4/16/13)
The location appears to be incorrect for call sign ENUM-ASTR14, Radio Astronomy Receiver Table Mountain Radio Receiving Zone (TMRZ). The location plotted on the map is somewhat NW of the location from the rules, 40 08 02 N and 105 14 40 W.

jesse (4/16/13)
Thank you for identifying this error. The Table Mountain Radio Receiving Zone (TMRZ) latitude seconds value was set to 50 and not 02. This has been corrected.

We have also reviewed and verified the coordinates for all other radio astronomy stations.

No duplicates.

Ticket 59: White Space Channel Calculator

Date Created
4/16/13 4:53 PM

Last Updated
4/16/13 5:07 PM

Admin History
4/23/13 2:19 PM: Resolution set to FIXED

r.roberts (4/16/13)
The White Space Channel Calculator presents some inconsistent information.

For example, at 27.558665, -80.869,

For channel 25, when you hover over the icon presented in the 150-200 and 200-250 columns, the tip says Wireless microphone reserved channel. This is not a reserved channel.

For channels 26 and 41, a question mark (?) indicating No info is shown in the MODE II 40 column, yet the 100 column is checked in both cases.

For channel 38, there is a check in the LPAUX column indicating available for LPAUX use, yet channel 39 is shown as reserved as the first available channel above channel 37.

jesse (4/23/13)
Thank you for identifying these three issues. They have each been resolved as follows:

Issue 1: For channel 25...

The White Space Channel Calculator application has been updated to include a pre-calculation filter to identify and calculate channel availability only for valid device configurations at the user-provided location.

Previously the application attempted to calculate hypothetical availability for all possible separation distance segments. However when accounting for the maximum antenna height above ground only a limited number of segments are possible for a given location.

Disallowed separation distance segments are now identified in the White Space Channel Calculator application with an 'Invalid' icon.

Issue 2: For channels 26 and 41...

This was a user-interface logic related issue where the application was misinterpreting a channel availability scenario where FIXED devices are precluded from operation but MODE-II devices are not.

Issue 3: For channel 38...

The LPAUX reserved channel calculator was incorrectly assigning the first channel where unlicensed operation is allowed and not the first unoccupied channel.

We very much appreciate your feedback!

No duplicates.

Ticket 60: Spectrum Explorer presents different available channels vs. Spectrum Bridge and Telcordia

Date Created
4/17/13 11:06 AM

Last Updated
4/17/13 11:08 AM

Admin History
4/25/13 9:11 AM: Resolution set to FIXED

r.roberts (4/17/13)
There are differences in both the reserved microphone channels and the available channels presented by the Spectrum Explorer, vs. the Spectrum Bridge (SBI) and Telcordia white spaces web sites.

For Example: Search Location 34.7, -83.71, Antenna Height 3.

At this location, the antenna height does not affect the results because the location HAAT is negative enough to cancel any allowable AGL. The Spectrum Explorer shows location HAAT as -137.2m, while SBI and Telcordia show location HAAT as -125.14m and -125.1m, respectively.

The Spectrum Explorer reserves channels 36 and 39 for wireless microphones, while SBI and Telcordia reserve channels 35 and 38 for wireless microphones. The Spectrum Explorer reserves channel 36 for wireless microphones, which indicates it is not considered occupied, while SBI and Telcordia show channel 36 as occupied by call sign WYFF. The Spectrum Explorer shows channel 35 as usable by all TVBDs, while SBI and Telcordia show channel 35 as unoccupied but not usable by TVBDs, because the location is inside the contour for call sign WYFF on adjacent channel 36. For the Spectrum Explorer to consider channel 35 to be available, the contour for WYFF must be at least 4 km away, which indicates a significant difference in the calculated contour for WYFF between the databases.

The Spectrum Explorer shows channel 38 as available for wireless microphones, but apparently does not consider it unoccupied, since channel 39 is instead reserved as the first unoccupied channel above channel 37. SBI and Telcordia reserve channel 38 for wireless microphones, indicating it is unoccupied but not usable by TVBDs, due to the proximity to the contour for call sign WBUD-LP (<4km). The Spectrum Explorer reserves channel 39 for wireless microphones, while SBI and Telcordia show channel 39 as usable by all TVBDs.

jesse (4/25/13)
Thank you for identifying these three important issues. They have each been addressed or resolved as follows:

Issue 1: Location HAAT...

As background:

> *73.313(d)(1) Prediction of coverage* describes a manual charting technique and calls for eight radials drawn from the antenna site and extending between 3 and 16 kilometers therefrom".
>
> *73.684(d) Prediction of coverage* similarly describes a manual charting technique and calls for eight radials drawn from the antenna site and extending between 3.2 and 16.1 kilometers therefrom".

For computer calculations of HAAT the FCC guidelines call for "at least 8 evenly spaced radials from the transmitter site".

It appears the other systems (Google, Telcordia, Spectrum Bridge) have chosen to use the minimum allowable number of radials in calculating a HAAT value. We have therefore reduced the number of radials incorporated into our own HAAT calculator to match.

At the coordinate [34.7, -83.71] (WGS_84) we now note the following HAAT values:

> -123.8 m Key Bridge (was -141.4 m)
> -125.14 m Spectrum Bridge
> -125.1 m Telcordia
> NONE Google

The other systems do not provide coordinate elevation details or an API for further mathematical evaluation. However, inspection of the document *Channel Calculations for White Space Guidelines* section 2.3.2 indicates that an interpolation or data smoothing strategy may be implemented by the other systems.

We can find no guidance or Rule-based reason why such a strategy should be implemented. The NED-1 is already an aggregate data set derived from a number of different sources with a rigorously studied and documented Absolute Vertical Accuracy (2.44 m) and Relative Accuracy (1.64). Height above average terrain is already an average of averages and we can find no justification to add yet another averaging filter.

Issue 2: Channels 36 and 39...

Our own analysis of the WYFF contours mapped on the Key Bridge and Telcordia systems which shows a maximum discrepancy of approximately 6 km. The query location appears to be within this contour mismatch.

The cause of this discrepancy appears to be related to an earlier issue when this contour was calculated using an incorrect digital terrain model and never updated. The WYFF contour has been recalculated and now appears to match across all systems.

Issue 3: Channel 38...

This is an effect of the same error noted and corrected in ticket 59 (See Issue 3).

Thank you again! We very much appreciate your feedback!

Ticket 63 (Duplicate to 60) : follow up to response on prior commet regarding different available channels

Date Created
4/25/13 12:45 PM

Last Updated
4/25/13 12:54 PM

Admin History
4/25/13 1:20 PM: Status set to IN_PROGRESS
4/25/13 1:23 PM: Set as duplicate to 60
4/29/13 10:12 AM: Resolution set to FIXED

r.roberts (4/25/13)
This is a follow up to your Reply Comment Report to my feedback submitted on 4/17/2013, reference your ticket number 60. The following text is from your reply:

Issue 2: Channels 36 and 39...

Our analysis of the differences between the contours for Telcordia, Google and Spectrum Bridge shows a maximum discrepancy of less than 1 meter. The 6 km difference noted by Key Bridge is significant, since this can easily result in differences in available channels between the systems. 6 km is larger than the co-channel separation distance required for TVBDs with antenna HAAT less than 3 meters (4.0 km), and is also larger than all of the adjacent channel separation distances (max 2.4 km).

Spectrum Bridge uses the RC_AMSL value from the CDBS in contour calculations, and calculates the site elevation and radial HAAT. The RC_AGL and the RC_HAAT values are retrieved from the CDBS, but are only used if RCAMSL is not present in the CDBS, in accordance to the FCC Q&A guidance dated 8/23/11. Finally, the RC_HAAT value is retained in the database as required by the rules.

Since the maximum difference in contour distances between Telcordia, Google and Spectrum Bridge is less than 1 meter, this indicates that all three systems calculate contours in the same manner.

jesse (4/25/13)
Requested WYFF sample contour from FCC OET to analyse for comparison.

jesse (4/29/13)
Received clarification from FCC OET. The WYFF contour has been rebuilt.

As there is no publicly available data the 'less than 1-meter' claim cannot be independently verified. However, visual inspection indicates a close match.

Ticket 62: Canada antenn height

Date Created
4/24/13 5:33 PM

Last Updated
4/24/13 5:33 PM

Admin History
4/25/13 10:48 AM: Status set to IN_PROGRESS
4/29/13 4:40 PM: Resolution set to FIXED

r.roberts (4/24/13)
While reviewing the Canada antenna contours, it appears the antenna height information being used to calculate the contours may be incorrect.

Example: https://whitespace.keybridgeglobal.com/content/explore/database/wsif/detail.xhtml?uuid=ae1150fa-6a49-4d41-990a-4fb8347e672a

This detail data for station CKKM-TV shows the Antenna HAG as 1892.8 m, which is higher than any antenna structure in Canada.
I suspect the HAG value may be incorrect because of what has to be an error in the Industry Canada database documentation: For TV Stations, the RAD_CENTER field is descrived as AGL, but with RAD_CENTER values in the database exceeding 2600 meters, this must be AMSL instead. Additionally, the FM stations section of the same document describes RAD_CENTER as "Radiating Center Above Mean Sea Level".

So I believe the value of 1892.8 m is actually RCAMSL.

jesse (4/25/13)
Documentation question referred to FCC and Industry Canada for confirmation.

jesse (4/29/13)
Thank you for this very helpful report. We have received confirmation from FCC OET and Industry Canada that the documentation is in error. As you suggest, within the BDBS documentation:

> Field 40: RAD_CENTER for TV should also be "*Radiating Center Above Mean Sea Level 0.0 to 5000.0 metres*".

This correction has been implemented in our Canadian database reader. Changes will be reflected in the next White Space database build. Thank you again!

No duplicates.